# An Extension of Rushton's Theory of Race Differences in *r-K* Life History Strategy to Australian Aborigines (PREPRINT)

Richard Lynn*

Ulster Institute for Social Research, London
*Email: Lynnr540@aol.com

Key words: Rushton; *r-K* life history; Australian Aborigines

Abstract
Rushton's theory of race differences in *r*-K life history strategy is extended to Australian Aborigines and shows that these are higher *r* and lower K than Negroids.

Rushton (2000) has proposed that there are race differences in *r*-K life history strategy. His theory is drawn from biology, in which species are categorized on a continuum running from *r* strategists to K strategists; *r* strategists have large numbers of offspring and invest relatively little in them, while K strategists have fewer offspring and invest heavily in them by feeding and protecting them during infancy and until they are old enough to look after themselves. Fish, amphibians and reptiles are *r* strategists with large numbers of offspring and minimum investment, while mammals are K strategists with fewer offspring and greater investment. The K strategy is particularly strongly evolved in monkeys, apes and humans. Species that are K strategists have a syndrome of characteristics of which the most important are larger brain size, higher intelligence, fewer offspring, longer gestation, a slower rate of maturation in infancy and childhood, and a longer life span.

Rushton applied *r*-K life history theory to three races of *Homo sapiens,* namely the Mongoloids (North East Asians), Caucasoids (Europeans) and Negroids (sub-Saharan Africans). His theory was that Mongoloids are the most K evolved and Negroids the least K evolved, while Caucasoids fall intermediate between the two although closer to Mongoloids. He supported his theory by documenting that the three races differ on over 60 co-evolved sets of morphological, physiological, developmental, psychological and behavioral traits showing that the most K evolved Mongoloids have larger brain size, higher intelligence, greater length of gestation, slower rate of maturation in infancy and childhood, slower sexual maturation, lower fertility, lower aggression, lower crime and greater longevity. These differences are summaried in Table 1.1 in Rushton (2000, p. 5).

Rushton confined his analysis to the Mongoloids, European Caucasoids and Negroids. These are only three of the nine major races (or, as they prefer to call them, "genetic clusters") listed by Cavalli-Sforza, Menozzi & Piazza (1994, p. 79) The others are the South Asian and North African Caucasoids, South East Asians, Arctic Peoples, Native American Indians, Pacific Islanders and Australian Aborigines. In this paper we examine whether Rushton's theory can be confirmed by extension to the Australian Aborigines.

## Australian Aborigines

The hypothesis to be presented is that the Australian Aborigines are a higher *r* – lower K people than Negroids. The hypothesis is supported by data for a number of *r*-K variables for Australian Caucasoids, American Caucasoids, American Negroids and Australian Aborigines. The data are summarized in Table 1. Row 1 gives brain size data for American Caucasoids and American Negroids, males and females combined, given by Rushton (1992) for a stratified random sample of 6,325 military personnel and by Smith & Beals (1990) for Australian Aborigines showing the smallest brain size in Aborigines, as expected if these are the most *r* and the least K selected. Row 2 gives intelligence data showing the lowest IQ in Australian Aborigines.

**Table 1.** Differences in *r-K* variables in Australian Caucasoids, American Caucasoids, American Negroids and Australian Aborigines

| | Variables | Australian Caucasoids | American Caucasoids | American Negroids | Australian Aborigines | Reference |
|---|---|---|---|---|---|---|
| 1 | Brain Size (cm) | (1382) | 1382 | 1358 | 1225 | Rushton, 1992; Smith & Beals, 1990 |
| 2 | Intelligence | 100 | 100 | 85 | 62 | Jensen & Wang, 1994; Kramer et al., 1995; Lynn, 2015 |
| 3 | Fertility | 1.74 | 1.64 | 1.78 | 2.37 | Australian Bureau of Statistics, 2019; Duffin, 2020a |
| 4 | Infant mortality 2002 | 3.7 | 5.1 | 11.3 | 16.1 | Freemantle et al., 2006; National Center for Health Statistics, 2006. |
| 5 | Infant mortality 2016 | 3 | 4.7 | 11 | 6 | Australian Institute of Health & Welfare, 2011; Duffin, 2020b |
| 6 | Life expectancy men | 80 | 76.5 | 74.9 | 72 | Australian Bureau of Statistics, 2019; Centers Disease Control, 2018 |
| 7 | Life expectancy Women | 85 | 81.1 | 78.2 | 76 | Australian Bureau of Statistics, 2019 ; Centers Disease Control, 2018 |
| 8 | Child neglect: % | 0.45 | 0.49 | 3.2 | 3.46 | Australian Institute of Health & Welfare, 2011; Lauderdale et al., 1980; Ards et al., 2003 |
| 9 | Crime | 1 | 1 | 8.4 | 15 | Lee, 2013; Taylor & Whitney, 1999 |
| 10 | Intimate partner violence | 25 | 32 | 41 | 60 | **Breilding et al., 2010; Cox 2015** |
| 11 | Dementia, 65+ | 5 | 12 | 21 | 27 | Smith et al., 2010; Demirovic et al., 2003 |
| 12 | Conduct disorders | 1 | 1 | 1.6 | 4 | Gray et al., 2000; McDermot & Spencer, 1997 |
| 13 | Sexual precocity % | 1 | 1 | 1.4 | 5 | Australian Bureau of Statistics, 2011; Centers Disease Control, 1992 |
| 14 | Gonorrhoea per 10,000 | 1.7 | 2.5 | 42.7 | 109 | Australian Bureau of Statistics, 2011; Centers Disease Control, 2012 |
| 15 | Syphilis per 10,000 | 0.47 | 0.23 | 1.6 | 2.7 | Australian Bureau of Statistics, 2011; Centers Disease Control, 2012 |
| 16 | Chlamydia per 10,000 | 0.3 | 1.6 | 119 | 164 | Australian Bureau of Statistics, 2011; Centers Disease Control, 2012 |

Row 3 gives the TFRs (Total Fertility Rates defined as average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age) for 2018 showing the lowest rates for American Caucasoids (1.64) followed by Australian Caucasoids (1.74), American Negroids ( 1.78 ), and the highest rate for Australian Aborigines ( 2.37).

Row 4 gives data for infant mortality per 1,000 live births for 2002 showing the lowest rate for Australian Caucasoids (3.7) followed by American Caucasoids (5.1), American Negroids (11.3) and the highest rate for Australian Aborigines (16.1). Row 5 gives infant mortality per 1,000 live births for 2016 showing the lowest rate for Australian Caucasoids (3.0) followed by American Caucasoids (4.7), Australian Aborigines (6.0) and the highest rate for American Negroids (11.0). Notice that during the years from 2002 to 2016 the infant mortality rate for Australian Aborigines declined considerably from 16.1 to 6.0 per 1,000 live births while that for American Negroids has hardly declined at all (from 11.3 to 11.0). The explanation for this appears to be the improvement of universal health care in Australia during these years.

Rows 6 and 7 give data for longevity for men and women expressed as life expectancy at birth in 2014-2016 showing the highest for Australian Caucasoids (men 80.0 years; women 85.0 years) followed by American Caucasoids (men 76.5 years; women 81.1 years) and American Negroids (men 74.9 years; women 78.2 years) and the lowest for Australian Aborigines (men 72 years; women 76 years).

Row 8 gives data for child neglect assessed as percentages of the failure by the parent or parents to provide for a child's basic needs, including failure to provide adequate food, shelter, clothing, supervision, hygiene or medical attention. The Australian data are for 2010-2011 showing that child neglect was 7.5 times more prevalent among Australian Aborigines than among Australian Caucasoids. The data for American Caucasoids and Negroids are the average of two studies (Lauderdale et al., 1980; Ards et al., 2003). The data show the lowest rate of child neglect in Australian Caucasoids (0.45%) followed by American Caucasoids (0.49%), a much higher rate in American Negroids (3.2%) and the highest rate in Australian Aborigines (3.46%).

Row 9 gives data for crime assessed as rates of imprisonment expressed as odds ratios with the rate for Australian Caucasoids and American Caucasoids set at 1 showing the rate for American Negroids 8.4 times greater than that for European Caucasoids (Taylor & Whitney, 1999) and the rate for Australian Aborigines fifteen times greater than that for Australian Caucasoids (Lee, 2013). Row 10 gives data for intimate partner experienced by women showing that this was most prevalent among Australian Aborigines (60 percent) followed by American Negroids (41 percent), AmericanCaucasoids (32 percent) and Australian Caucasoids (25 percent). Further data for crime assessed as hospitalisation as a result of domestic violence for 2006-2007 expressed as odds ratios showed that the rate for this was 34 times more prevalent among Australian Aborigines than among European Caucasoids (Steering Committee, 2009).

Row 11 gives data for the prevalence of dementia among those aged 65 years and older as a measure of fast life history showing that this was most prevalent among Australian Aborigines (27 percent) followed by American Negroids (21 percent), American Caucasoids (12 percent) and Australian Caucasoids (5 percent).

Row 12 gives data for the prevalence of conduct disorder in children assessed as suspension and expulsion from school expressed as odds ratios his was 4 times more prevalent among Australian Aborigines than among Australian Caucasoids (Aborigines were three percent of school children and 12 percent of those suspended or expelled) (Gray et al., 2000). Also shown is the prevalence of conduct disorder in school children in the United States expressed as odds ratios showing that this was 1.6 times more prevalent in American Negroids than in American Caucasoids (McDermot & Spencer, 1997). In a later study, Cuffe et al. (2005) reported an almost identical result that disruptive behaviour in school students in American Negroids than in American Caucasoids.

Row 13 gives data for the prevalence of sexual precocity assessed as the percentage of teenagers who had had experience of sexual intercourse expressed as odds ratios with the rate for Caucasoids set at 1. The data for Australia are for 15-19 year olds in 2011 and show the rate for Australian Aborigines five times greater than that for Australian Caucasoids . The data for the United States are for 14-17 year olds in 1990 and show the rate for American Negroids 1.4 times greater than that for American Caucasoids.

Rows 14 through 16 give data for the prevalence of sexually transmitted diseases which Rushton (2000, p. 178) predicts should be greatest in Negroids, intermediate in European Caucasoids and lowest in Mongoloids because of the differences in sexual activity and promiscuity. Row 14 gives data for the prevalence of gonorrhea per 10,000 showing the lowest rate for Australian Caucasoids (1.7) followed by American Caucasoids (2.5), American Negroids (42.7) and the highest rate for Australian Aborigines (109). Rows 15 and 16 give data for the prevalence of syphilis and chlamydia showing similar differences.

The hypothesis that the Australian Aborigines are a higher *r* – lower K people than Negroids is examined for African Negroids for brain size and intelligence and summarized in Table 2. Row 1 gives brain size data for males and females combined given by Smith & Beals (1990) for 87 populations worldwide based on approximately 20,000 crania showing smaller brain size in Aborigines than in African Negroids. Row 2 gives intelligence data showing lower IQ in Australian Aborigines as the average of 17 studies than in African Negroids as the average of 143 studies. Both data sets show that the Australian Aborigines are a higher *r* – lower K people than African Negroids.

**Table 2.** Differences in *r-K* variables in European Causasoids, African Negroids and Australian Aborigines

| | Variables | European Causasoids | African Negroids | Australian Aborigines | Reference |
|---|---|---|---|---|---|
| 1 | Brain Size (cm) | 1369 | 1282 | 1225 | Smith & Beals, 1990 |
| 2 | Intelligence | 100 | 71 | 62 | Lynn, 2015 |

## Discussion

There are four points of interest in the results. First, the hypothesis that Australian Aborigines display higher *r* – lower K life history strategy characteristics than Negroids is confirmed by the data given in Tables 1 and 2. The data presented in Table 1 show that for all except one of the variables Australian Aborigines display higher *r* – lower K life history strategy than American Negroids. The single exception is the infant mortality rate in 2016 shown in row 5 which was higher in American Negroids than in Australian Aborigines. Apart from this exception, the results support the hypothesis that Australian Aborigines exhibit higher *r* – lower K life history strategy than do American Negroids. The hypothesis is further confirmed by the data given in Table 2 showing that Australian Aborigines exhibit higher *r* – lower K life history strategy than do African Negroids assessed by their smaller brain size and lower intelligence.

Second, there remain a number of *r*-K life history strategy variables that could be examined to test the hypothesis further, including the length of gestation, rate of maturation in infancy and childhood, sexual maturation, and dizygotic twinning rates.

Third, if the provisional conclusion from the data presented in Tables 1 and 2,that Australian Aborigines exhibit higher *r* – lower K life history strategy than do African Negroids, is valid, this raises the question of how this difference evolved. It is doubtful it can be explained by either of the two theories proposed by Rushton to explain the Mongoloid-Caucasoid-Negroid differences in *r-K* life history strategy. Rushton's (1985) first theory was that unpredictable environments selected for *r*- life history strategy such that the evolutionary environment in sub-Saharan Africa was the most unpredictable and that in Northeast Asia the least unpredictable. This explanation was criticized by Miller (1993) on the grounds that there is no persuasive evidence that the environment in sub-Saharan Africa was more unpredictable than that in Europe or North East Asia. Rushton accepted this objection and adopted the cold winters theory originally advanced in Lynn (1991) and which Rushton (2000, p. 7) summarized as follows: "Because groups migrating out of Africa into the colder climate of Eurasia encountered more challenging environments, including the last ice age, which ended just 12,000 years ago, they were more stringently selected for intelligence, forward planning, sexual and personal restraint, and a K-parenting strategy. The Siberian cold experienced by Oriental populations was the most severe and exerted the greatest selection."

It is doubtful whether this theory can explain the higher *r* – lower K life history strategy of Australian Aborigines than of Negroids because the evolutionary environment of Australia was likely about the same as that of sub-Saharan Africa. The Australian Aborigines have the same climatic morphological adaptations as the Negroids such as dark skin and wide nostrils, and it is improbable that the evolutionary environment of Australia was hotter than that of sub-Saharan Africa.

Fourth, therefore the higher *r* – lower K life history strategy of Australian Aborigines than of Negroids requires an explanation. Two hypotheses are proposed. First, the evolutionary environment of sub-Saharan Africa was much more densely populated by humans than that of Australia. In densely populated sub-Saharan Africa there would have been competition for resources involving warfare between groups and this would have selected for greater brain size and higher intelligence. Alexander & Tinkle (1968) may have been the first to propose that groups of *Homo habilis,* approximately 2.5 million years ago, engaged in warfare to secure better territory, and that these wars continued in evolving hominids and were the principal evolutionary pressure responsible for the increase in brain size and intelligence when *Homo habilis* evolved into *Homo sapiens.* Similar arguments that group warfare would have selected for the evolution of greater intelligence in evolving hominids have been presented and elaborated by Bigelow (1969), Pitt (1978) and Lynn (2019).

The evolutionary environment of Australia would have been much less densely populated by humans than that of sub-Saharan Africa. Humans entered Australia about 60,000 years ago their numbers reached no more than approximately 300,000 when the Europeans arrived (Bradshaw, 1997). There would have been little or no competition for resources involving warfare between groups in this sparsely dispersed population and hence little or no selection for greater brain size, higher intelligence and other K life history strategy characteristics.

What is important really is population size relative to natural resources. This is what creates competition, not necessarily population density as such. In the absence of rapid technological change, higher efficiency at exploiting resources leads to competition because efficient exploiters of natural resources have population growth that brings them in competition with neighboring groups. Therefore competition is as much a consequence as a cause of evolution for higher intelligence and a more efficient social order.

The second hypothesis is that the Australian Aborigines were hunter-gatherers until the European conquest (White, 2011), but most Negroidswere post-Neolithic peoples who had made the transition from hunter-gatherers to farmers or pastoralists during the last two millennia BC. During this time, pastoralism spread from the Upper Nile and the Turkana Basin through Eastern and Southern Africa, while the crop-growing Bantu expanded from their homeland in Eastern Nigeria and adjoining parts of Cameroon across much of the continent (Crowther et al., 2018;

Gifford-Gonzalez, 2017; Kay & Kaplan, 2015). The Neolithic lifestyle of farming and herding required more foresight and greater cognitive ability than hunter-gathering, e.g. saving and planting seeds  maintaining and protecting livestock, and would likely have selected for higher K life history strategy characteristics in African Negroids. The Pastoral Neolithic seems to have been confined to the Sahara when it still was much wetter than today and surrounding areas, starting in the 8th millennium BP. It later spread to East Africa and reached South Africa in the 3rd millennium BP (1st millennium BC), but could not penetrate into the humid regions because of trypanosomiasis.

## References


Alexander, R.D. & Tinkle, D.W. (1968). Warfare in early hominids. *Bioscience* 18: 245-268.

Ards, S.D., Myers, S.L., Malkis, A., Sugmeg, E. & Zhu, I. (2003). Racial disproportionality in reported and substantiated child abuse and neglect: An examination of systematic bias. *Children and Youth Review* 25: 375-392.

Australian Bureau of Statistics (2011). *Australian Demographic Statistics.* Canberra: Australian Govt.

Australian Bureau of Statistics (2019). *Australian Demographic Statistics.* Canberra: Australian Govt.

Australian Institute of Health and Welfare (2018). *Child Protection Australia 2010-11*. Canberra, ACT: AIHW.

Bigelow. R.S. (1969). *The Dawn Warriors: Man's Evolution toward Peace*. Boston: Little Brown.

Bradshaw, J.L. (1997). *Human Evolution: A Neuropsychological Perspective*. Hove, UK: Psychology Press.

**Breilding, M.J., Chen, J. & Black, M.C. (2010). *Intimate Partner Violence in the United States – 2010.* Atlanta, GA: National Centers for Injury Prevention.**

**Cavalli-Sforza, L.L., Menozzi, P. & Piazza, A. (1994). *The History and Geography of Human Genes.* Princeton, NJ: Princeton University Press.**

Centers for Disease Control (1992). Sexual behavior among high school students – United States, 1990. *Morbidity and Mortality Monthly Report* 40, Nos. 51 & 52, 885-888. Atlanta, GA: CDC.

Centers for Disease Control (2012). *Today's HIV//Aids epidemic*. Atlanta, GA: Centers for Disease Control.

Centers for Disease Control (2018). *Race differences in life expectancy*. Atlanta, GA: Centers for Disease Control.

**Cox, P. (2015). *Violence against Women in Australia.* Sydney: ANROWS.**

Crowther, A., Prendergast, M.E., Fuller, D.Q. & Boivin, N. (2018). Subsistence mosaics, forager-farmer interactions, and the transition to food production in eastern Africa. *Quaternary International* 489: 101-120.

Cuffe, S.P., McKeown, R.E., Addy, C.I. & Garrison, C.Z. (2005). Family and psychosocial risk factors in a longitudinal epidemiological study of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry* 44: 121-129.

Demirovic, J., Prineas, R., Loewenstein, D., Bean, J., Duara, R., Sevush, S. & Szapocznik, J. (2003). Prevalence of dementia in three ethnic groups: The South Florida Program on Ageing and Health. *Annals of Epidemiology* 13: 472-478.

Duffin, E. (2020a). *US fertility, 1990-2018.* Washington, D.C.: Statistica.

Duffin, E. (2020b). *US infant mortality risk, 1990-2018.* Washington, D.C.: Statistica.

Freemantle, C.J., Read, A.W., de Klerk, N.H., Anderson, I.P. & Stanley, F.J. (2006). Patterns, trends, and increasing disparities in mortality for Aboriginal and non-Aboriginal infants born in Western Australia, 1980–2001: Population data base study. *Lancet* 367: 1758-1766.

Gifford-Gonzalez, D. (2017). Pastoralism in sub-Saharan Africa. In: U. Albarella, M. Rizzetto, H. Russ, K. Vickers & S. Viner-Daniels (Eds.), *Oxford Handbook of Zooarchaeology,* pp. 396-413. Oxford: Oxford University Press.

**Gray, M.C., Hunter, B. & Schwab, R.G. (2000). Trends in indigenous educational participation and attainment. *Australian Journal of Education* 44: 101-117.**

Jensen, A.R. & Whang, P.A. (1994). Speed of accessing arithmetic facts in long term memory: A comparison of Chinese-American and Anglo-American children. *Contemporary Educational Psychology* 19: 1-12.

**Kay, A.U. & Kaplan, J.O. (2015). Human subsistence and land use in sub-Saharan Africa, 1000 BC to AD 1500: A review, quantification, and classification. *Anthropocene* 9: 14-32.**

**Kramer, R.A., Allen, L. & Gergen, P.J. (1995). Health and social characteristics and children's cognitive functioning: Results from a national cohort. *American Journal of Public Health* 85: 312-318.**

Lauderdale, M., Valiunas, A. & Anderson, R. (1980). Race, ethnicity and child maltreatment: An empirical analysis. *Child Abuse and Neglect* 4: 163-169.

**Lee, J. (2013). Disadvantaged Aboriginal background now a factor in court rulings. *The Age,* Oct. 3, 1-6.**

**Lynn, R. (1991). The evolution of race differences in intelligence. *Mankind Quarterly* 32: 99-173.**

Lynn, R. (2015). *Race Differences in Intelligence: An Evolutionary Analysis*, 2nd Revised Edition. Augusta, GA: Washington Summit.

Lynn, R. (2019). The eugenic and dysgenic effects of war. *Mankind Quarterly* 60: 47-63.

McDermot, P.A. & Spencer, M.B. (1997). Racial and social class prevalence of psychopathology among school-age youth in the United States. *Youth and Society* 28: 387-414.

Miller, E.M. (1993). Could *r* selection account for the African personality and life cycle? *Personality and Individual Differences* 15: 665-676.

National Center for Health Statistics (2006). *Infant mortality*. Atlanta, GA: Centers for Disease Control.

Pitt, R. (1978). Warfare and hominid brain evolution. *Journal of Theoretical Biology* 72: 551-575.

Rushton, J.P. (1985). Differential K theory: The sociobiology of individual and group differences. *Personality and Individual Differences* 6: 441-452.

Rushton, J.P. (1992). Cranial capacity related to sex, rank, and race in a stratified random sample of 6,325 military personnel. *Intelligence* 16: 401-414.

Rushton, J.P. (2000). *Race, Evolution and Behavior: A Life History Perspective*. Port Huron, MI: Charles Darwin Research Institute.

**Smith, C.L. & Beals, K.L. (1990). Cultural correlates with cranial capacity. *American Anthropologist* 92: 193-200.**

**Smith, K., Flicker, L., Dwyer, A., Atkinson, D., Almeida, O.P., Lautenschlager, N.T. & LoGiudice, D. (2010). Factors associated with dementia in Aboriginal Australians. *Australian and New Zealand Journal of Psychiatry* 44: 888-893.**

**Steering Committee for the Review of Government Service Provision (2009). *Overcoming Indigenous disadvantage: Key indicators 2009 report*. Canberra: Productivity Commission.**

**Taylor, J. & Whitney, G. (1999). US racial profiling in the prevention of crime: Is there an empirical basis? *Journal of Social, Political and Economic Studies* 24: 485-509.**

White, P. (2011). Revisiting the "Neolithic Problem" in Australia. *Records of the Western Australian Museum*, Supplement 79: 86-92.